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THE PLANT DISEASE BULLETIN

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The Plant Disease Survey

Number 4, October 1,
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BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

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CONTENTS

Page

- Plant Disease Survey, Office Staff, Assistants and Collaborators 63
- Reports 64
- Frost Injury 64
- Diseases 66

  - Apple 66
    - Scab 66
    - Cedar Rust 69
    - Bitter Rot 71
    - Fire Blight (See Pear) 79
    - Other Diseases 72
  - Cabbage 73
    - Club Root 73
    - Yellows 73
    - Black Rot 74
  - Cherry (See Peach) 77
    - Brown Rot (See Peach) 77
  - Corn 74
    - Smut 74
  - Oats 74
    - Smut 74
  - Peach 74
    - Leaf Curl 74
    - Scab 76
    - Brown Rot of Stone Fruits 77
    - Other Diseases 78
  - Pear 79
    - Fire Blight 79
    - Scab 81
  - Pepper 81
    - Pod Canker 81
    - Mosaic 81
    - Fusarium Wilt 82
  - Plum (See Peach) 77
    - Brown Rot (See Peach) 77
  - Wheat 82

PLANT DISEASE SURVEY

Bureau of Plant Industry.

Washington, D. C.

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REPORTS

On the preceding page there is given a list of collaborators who are making reports that appear in the Plant Disease Bulletin. Unless otherwise indicated these collaborators are responsible for the reports from their respective states. Where there are two or more in a state the one whose name appears first is the authority for the report. In case one of the other collaborators furnishes the information his name will appear in parenthesis after the name of the state.

The present number of the Plant Disease Bulletin deals principally with diseases of fruit as they were reported as occurring on September 15. The statistics on frost injury were obtained from the United States Weather Bureau, Division of Agricultural Meteorology, which Office in turn secured the information from their cooperative observers.

FROST INJURY

The frost that occurred September 9-12 was exceptionally early and severe over the interior of New England and New York, about half of Pennsylvania, northwestern Ohio, northern Indiana and Illinois, a small part of Iowa, and most of Michigan, Wisconsin, Minnesota and North Dakota. Many highlands and locations near lakes however, escaped without harm.

Corn was damaged materially in the northern and northeastern sections of the country. North Dakota reports 30% injury; Wisconsin 30-35%; Michigan 10% on low land; Indiana less than 50% on low land in extreme north; New York 30% in the eastern portion, and in the states of Ohio, Pennsylvania, West Virginia and Iowa the crop suffered more or less injury.

Potatoes and truck crops were injured throughout the Lake region and in the northeast. The bean crop in eastern New York was damaged to the extent of 20%. In Michigan the estimate is 10%, while in Wisconsin late beans were damaged 20-30%.

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Cranberries in Wisconsin were injured to the extent of 20-30%. Great damage was done to the crop in New England and in New Jersey 25-50% of the cranberries were destroyed.

The accompanying map prepared from the reports in the National Weather and Crop Bulletins for the weeks ending Sept. 11 and 18, shows the approximate areas of severe and slight frost injury. The heavily shaded portions represent areas where there were killing frosts quite generally distributed except near bodies of water and in protected localities. The lighter shaded area indicates light frosts, local in occurrence and only slightly injuring vegetation.

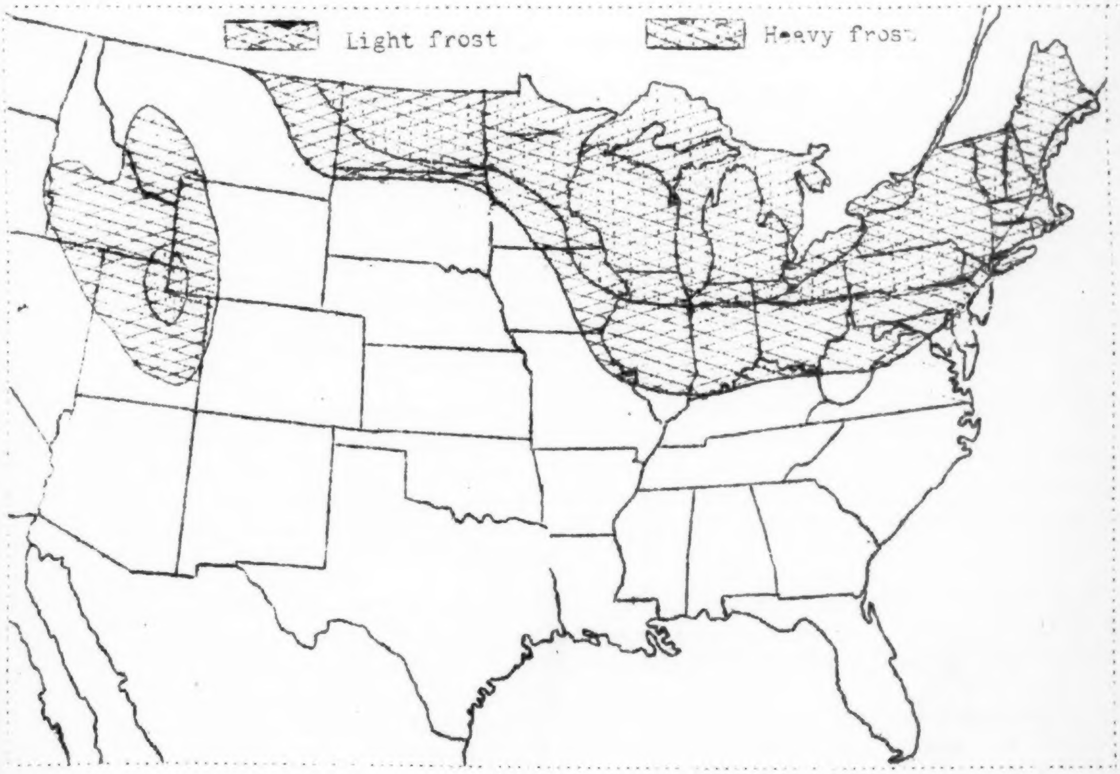

Fig. 3- Map showing area of occurrence of frost September 11-18, 1917.

DISEASES

APPLES

Scab caused by Venturia inaequalis.

The unusually large amount of scab in 1916 afforded an abundance of infested leaves for carrying the causal fungus through the winter. The rainy months of May and June 1917 were favorable for primary infection of the young leaves in most of the northern apple-producing states, with the result that the prospects for an epiphytotic were good. Considerable infection of the young fruit occurred and in some cases pedicel infection is reported as severe. The weather of the latter part of the summer was not especially favorable to the disease so that only a small amount of scab developed on the more mature fruit. The disease is reported as being worst this year in the states of New Jersey, New York, Michigan, Ohio, Virginia, Colorado, Arkansas and Tennessee.

Alabama: Disease never bad but prevalent in about the same amount as usual.

Arkansas: Leaf infection severe this year and early fruit infection occurred in large amounts in some orchards. Only a slight amount of disease developed later in the season. Spraying is effective when the application is made at the proper time. Scab is never severe in well kept orchards but is very severe in badly kept ones.

Mr. J. W, Roberts, Office of Fruit Disease Investigations, Bureau of Plant Industry, reports that the amount of disease in Arkansas this season is very slight as compared with the three preceding years. Dusting is employed to slight extent but scab not severe enough to give it a test. No reports that scab is serious.

Colorado: Disease not serious. It is so unimportant that Colorado fruit growers do not take it into consideration when spraying.

Connecticut: Apparently less than usual. Three applications of lime-sulfur have given good results. Dusting is being tried somewhat experimentally but has not been taken up generally.

Michigan: Prevalent in about the same amount as last year. In the College orchards spraying has been remarkably effective. Dusting is being taken up in an experimental way. Reports indicate that results are not as satisfactory as could be wished this year.

Mr. Leslie Pierce, of the Office of Fruit Disease Investigations, Bureau of Plant Industry, reports that in Berrien, Oceana and Grand Traverse Counties the disease is slightly more prevalent than usual. Leaf infection was severe and took place about May 28, five days after full bloom. Infection of the pedicels was slight only and occurred June 15, or 19 days after bloom. Early fruit infection was severe and occurred at the same time as that of the pedicels. There was a moderate amount of late infection on the older fruit August 20, at a time when the apples were half grown. In these counties from 40-95% control was obtained depending on time of application and thoroughness of work. Dusting not being practiced to any extent.

Minnesota (Stakman): Considerably less than last year. A slight to moderate amount of leaf and pedicel infection occurred about June 24, just after blooming. Only slight infection of the young fruit and no infection of the more mature fruit. Commercial lime sulfur 1-40 or 1-45 is most commonly used and is effective. Scarcely any dusting being done.

Mississippi: Scab is never serious in state.

New Jersey: More scab than usual. Leaf infection severe. Excellent results from spraying.

New York: About the same as last year, but reports of greater prevalence come from Allegany, Montgomery, Onondaga, Ontario, Tioga, Ulster and Wayne Counties. Primary leaf infection quite severe. First occurred in the state about May 30. In general the results from spraying have been very good. Dusting is reported as being carried on in at least five counties with very good results.

Ohio: About the same amount of scab this year as last. Leaf infection moderate to severe and occurred in June. Early fruit infection took place about July 25 and in some orchards was severe. Only a moderate amount of late fruit infection. Results of spraying this year have been variable. Bordeaux mixture as a pre-blossom spray was successful.

South Dakota: Disease very prevalent this year. Apples in the southern part of the state most affected.

Tennessee: Very slight amount of disease this year, occurring mostly on more mature fruit. Sprays applied for bitter rot are quite effective. The apple crop is very light this year and there are few reports of disease.

Mr. J. W. Roberts, Office of Fruit Disease Investigations, Bureau of Plant Industry, reports that only a very slight amount of scab occurs in Tennessee. No orchards seen where disease was serious.

Vermont: Very much less common and severe than last year. Only a moderate amount of leaf infection late in August. Fruit infection took place about August 15 when half grown.

Virginia: Not so prevalent as last year. Scab is not serious in the larger part of the state. A moderate amount of leaf and fruit infection occurred about June 13 while locally a considerable amount of late infection occurred August 1 as the fruit was reaching maturity. Spraying gives good control as a rule. Dusting is being taken up only experimentally. Sulfur dust controlled scab commercially in experiments this year but was not quite so efficient as lime sulfur.

Virginia (McClintock): Scab not observed in the vicinity of Norfolk since 1915.

Washington: Less disease reported this year than usual. Spraying has given good control in eastern Washington but poor in western Washington where it is less generally practiced. Very little dusting.

Below is given a table showing the varieties that have been reported from the various states by collaborators as being especially susceptible or resistant to scab this year.

Table 3.- Varieties of apples reported as being most, least, or only moderately affected with scab, with names of states from which such reports came.

Variety	States listing variety as most affected.	States listing variety as least affected.	States listing variety as moderately affected.
Alexander	Mich.*	--------	--------
Astrachan	Mich.*, Ohio	--------	--------
Baldwin	Mich.*	Conn., Ohio.	N. Y.
Baltimore	--------	Ohio	--------
Belmont	Ohio	--------	--------
Ben Davis Group	Ark., Mich.*, Va.	Ohio	--------
Boiken	--------	N. Y.	--------
Canada Red	Mich.*	--------	--------
Crab	N. Y.	--------	--------
Duchess	Mich.*	--------	Minn.
Early Harvest	Ohio	--------	--------
Fameuse	Mich.*, N.Y., Vt.	--------	--------
Gano	--------	Ohio	--------
Gideon	--------	Mich.*	--------
Greening	N. Y.	Vt.	Conn.
Grimes Golden	--------	Va.	--------
Jeffries	Ohio	--------	--------
Jonathan	--------	--------	Mich.*
King	--------	--------	Mich.*
Longfield	--------	--------	Mich.*
Lubsk Queen	Minn.	--------	--------
McIntosh	Conn., N. Y.	--------	--------
Maiden Blush	Ark., Mich.*, Ohio	--------	--------
Mammoth Blk. Twig	Ark.	--------	--------
Martha Crab	Minn.	--------	--------
Missouri Pippin	Ohio	--------	--------
Newtown Pippin	Ohio	--------	--------
Northern Spy	N. Y., Ohio	Mich.*	--------
Northwestern Greening	Ohio	Minn.	--------
Patten's Greening	--------	Minn.	--------
Ralls	Ohio	--------	--------
Rambo	Ohio	--------	--------
Rome Beauty	Ohio	--------	--------
Russet	--------	Conn., N. Y., Vt.	--------
Senator	Mich.*	--------	--------
Starr	N. J.	--------	--------
Tolman Sweet	--------	--------	Mich.*
Twenty Ounce	--------	N. Y.	--------
Virginia Crab	Minn.	--------	--------

Variety	States listing variety as most affected	States listing variety as least affected	States listing variety as moderately affected.
Wagner	--------	--------	Mich.*
Wealthy	--------	--------	Minn.
Winesap	Ohio, Va.	--------	--------
Winter Banana	Mich.*	--------	--------
Wolf River	--------	Mich.*	--------
Yellow Newtown	Va.	--------	--------
Yellow Transparent	--------	Mich.*	--------
York Imperial	--------	Va.	--------

*Report by Mr. Leslie Pierce, Office of Fruit Disease Investigations, Bureau of Plant Industry, for Berrien, Oceana and Grand Traverse Counties, Michigan.

Cedar Rust caused by Gymnosporangium Juniperi-virginianae.

Cedar rust is reported on September 15, 1917, as being severe on apples in the states of Arkansas, Minnesota, Mississippi, Pennsylvania, South Dakota, and Virginia; and moderate in Alabama, Colorado, North Carolina, and Ohio.

The greatest damage that has resulted this year has been from infection of the leaves. Reports of defoliation come from Arkansas and Virginia. Fruit infection is reported as being moderate to severe in Arkansas and Minnesota. The red cedar is common in all states heard from and in none are eradication methods being used except in Virginia where a cedar rust law is in operation.

Alabama: About the same as last year. First reported in March from Auburn. Infection of leaves and fruit slight. The disease is abundant on cedars which are common. The varieties of apple grown in the apple-growing sections are of a more or less resistant type which accounts for slight infection even when cedars are in close proximity to orchards.

Arkansas: Disease general. First reported in July. Leaf infection very severe. Some trees were nearly defoliated. Fruit infection only moderate. Red cedars are generally distributed throughout the apple-growing region but are not abundant. The best orchardists cut them out.

Colorado: Disease fully as abundant as last year. Leaf infection about the same but fruit infection small. Cedar and apple trees occur generally together. Control by eradication of cedars is not employed anywhere in the state. Jonathan is most affected while Maiden Blush and Winesap are least affected.

Connecticut: Not bad this year.

Michigan: "There is very little, if any, cedar rust in the state. Even where apples and cedars grow side by side we find no infection. Gymnosporangium globosum is common, causing rust on Crataegus, and

G. aurantiacum caused much loss on quinces. It is difficult to explain the freedom of Michigan apples from rust in view of the extensive occurrence in Wisconsin. Doubtless the scarcity of red cedars has something to do with it."- E. A. B.

Minnesota: More prevalent than for some years, especially on the fruit. First reported June 20. Leaf infection was very severe and fruit infection moderate to severe when near cedars. Red cedar is grown mostly as an ornamental, either isolated or in hedges, and in some districts is native. Little or no cedar eradication is practiced as the apple is not of sufficient importance to warrant such a measure. Wealthy and crab apples are most affected while Greenings, Okabena, Hibernal and Duchess are practically immune.

Mississippi: About the same amount as last year. Leaf infection severe in places. Fruit infection very slight. Commercial apple growing not practiced in the state.

New Jersey: Slight amount of disease, of very little importance.

New York: About the same as last year. First reported June 4 from Long Island. Not a serious disease, especially in the northern part of state. Red cedars scattered all over the state and often abundant about orchards. No cedar eradication has been practiced. Jonathan and Wealthy reported as being most affected this year.

North Carolina: First reported June 12. From reports received the disease was abundant locally. Red cedars are commonly present west of Raleigh in the part of the state where apples are grown.

Ohio: About the same as last year. Reported first July 10. Leaf infection quite severe but only slight fruit infection. Red cedar is abundant over the southeastern portion of the state. It is a real menace to the southeastern apple district. Eradication is being practiced only locally by some growers. Varieties most affected are Wealthy, Jonathan, Ben Davis and Lowell. Variety least affected is Stayman Winesap. Spraying only moderately effective.

South Dakota: First reported May 15. Leaf and fruit infection severe. Cedars very prevalent in southern part of state. Wealthy most susceptible.

Tennessee: About the same as last year. Leaf infection moderate. No disease noticed on fruit. Cedars abundant all over state.

Texas (Taubenhaus): No record of disease on apples this year. Plenty of cedar rust and cedars.

Virginia: Rusts are more severe than last year. First reported July 1. Heavy defoliation occurred, resulting in considerable under-sized fruit of poor quality. Considerable infection of fruit occurred locally, especially in Shenandoah County. Red cedars occur in great abundance throughout the state, being especially prevalent in apple-producing sections. A cedar rust law is in operation in certain parts of the state. Varieties most affected York Imperial, Northern Spy, Wealthy, Rome, Jonathan, Smith Cider. Varieties least affected Northwestern Greening, Stayman Winesap, Arkansas,

Grimes, Yellow Newtown. Spraying gave poor results unless it was applied at just the proper time and that cannot be foretold.

Washington: No disease in state.

Bitter Rot caused by *Glomerella rufomaculans*.

Bitter rot is reported as doing an average amount of damage this year in the belt where it normally occurs. Reports indicate its severity in Virginia, North Carolina, Arkansas and Texas.

Alabama: Disease not important.

Arkansas: More prevalent than last year. First reported in August at a time when seeds of Ben Davis variety were beginning to turn dark. Disease not especially severe. It is estimated that ½ to 1% of the fruit is affected. Ben Davis group most susceptible. Spraying completely controlled the disease in good commercial orchards.

Mr. J. W. Roberts, Office of Fruit Disease Investigations, Bureau of Plant Industry, reports the occurrence of bitter rot in Arkansas as early as July, at a time when the fruit was about half grown. The variety Givens most affected.

Colorado: Does not occur in state as a serious disease. Climate too dry.

Connecticut: Of little importance. Occurs chiefly in storage or on early varieties.

Michigan: Only present in state under extraordinarily wet conditions.

Minnesota: Seldom occurs. None this year.

Mississippi: No complaints this year. Climatic conditions are apparently such as to keep the disease in check.

New Jersey: Less than usual.

New York: Disease never very serious. Reported once this year, June 20.

North Carolina: About the same as last year. Very generally present and the cause of considerable loss. First reported July 20 at a time when the apples were nearly ripe. 25% of fruit affected. No difference in varieties noticed.

Ohio: No reports this year.

Tennessee: Disease slight this season. Very few reports received. Spraying has been very effective wherever practiced.

Texas (Taubenhaus): Fairly prevalent on ripe fruit. Controlled by spraying.

Vermont: Disease not observed.

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Virginia: About same as last year. Not very severe except locally. First reported July 1 on half grown fruit. Yellow Newtown and Ben Davis most affected. Winesap and York Imperial least affected. Control very satisfactory where ample and thorough spraying is practiced.

Washington: No bitter rot in the state.

Other Diseases.

Alabama: "The two most important apple diseases are blotch and black rot. Practically all loss of fruit due to the black rot fungus. Almost all cankers found in state are those caused by the same organism. All orchards cared for very poorly. No thorough or efficient spraying done." G. L. P.

Arkansas: Black rot caused by Physalospora cydoniae (=Sphaeropsis malorum) is the most general and severe apple rot in the state. 50% infection occurs in unkept orchards and from ½ to 1% infection in many good orchards. Sooty blotch not severe.

Mr. J. W. Roberts, Office of Fruit Diseases, states that blister canker caused by Nummularia discreta is one of the most serious diseases in Arkansas and Missouri. He also reports considerable amount of black rot on fruit following hail injury in various parts of state.

Connecticut: Fruit spot caused by Phoma pomi not so bad as last year. Sooty blotch no more prevalent than usual.

Michigan: Black rot attacked early apples and rotted them on the trees in some instances. Percent of loss was small however. The leaf spot form not observed and the canker about as prevalent as usual.

Minnesota: "Black rot cankers are very prevalent. This is probably due to the large amount of fire blight during the last few years. The black rot fungus seems to follow the blight injury and is now quite prevalent and destructive. It is fairly abundant on leaves in some orchards but can not be considered of first importance. No reports of its occurrence on fruit have been obtained."- E. C. S.

Mississippi: Blotch caused by Phyllosticta solitaria abundant in some orchard

New York: Stippin or bitter pit reported several times this season. Leaf spot and canker caused by Physalospora cydoniae are troublesome. The fruit rot form is never serious.

North Carolina: Blotch caused by Phyllosticta solitaria is the most serious apple disease except blight. Sooty blotch caused by Leptothyrium pomi universally present in the state.

Ohio: Leaf spot caused by Physalospora cydoniae prevalent. Blotch, stippin, fruit spot and sooty blotch collected this year. An undetermined root rot is present in closely planted trees at Wooster.

Tennessee: Black rot, leaf spot and canker caused by *Physalospora cydoniae* common.

Texas: (Taubenhaus): Blotch caused by *Phyllosticta solitaria* prevalent. *Physalospora cydoniae* is very prevalent this year, especially the leaf spot form which caused heavy defoliation.

Virginia: "A special survey has been made for black root rot of apple caused by Xylaria spp. It has been found throughout the apple-producing sections of the state and in the opinion of some growers is more destructive than all other diseases of the apple combined. I have found tree losses running as high as 25% in 20 yr. old orchards. A 5% loss in bearing orchards would certainly be a conservative estimate for the general run of infested orchards, and in some districts fully 50% of the orchards are infested."- F. D. F.

Virginia: (McClintock): Sooty blotch very common on all varieties.

Washington: Northwestern anthracnose caused by *Neofabraea malicorticis* is about the same as formerly on apple and pear.

Powdery mildew caused by *Podosphaera leucotricha* common but not so serious as during the past two years. Stippin or bitter pit (phys.) serious, especially in irrigated sections.

CABBAGE

Club Root caused by *Plasmodiophora brassicae*.

Additional reports received on the occurrence of club root show that the disease does not occur in either North Dakota or Nebraska. In Connecticut it is reported as causing injury in places. One farmer reports 80% of the plants diseased in seed bed.

Cabbage Yellows caused by *Fusarium conglutinans*.

Michigan: Disease has been reported from 4 localities in Michigan. It is not known how much of a factor it is in the cabbage fields.

Nebraska: One infected field found this year for the first time. This was at Kimball and was first noticed in July. Probably 5% of the plants were affected.

Wisconsin: (Extract from Michigan Dept. Botany News Letter, Sept. 22.) "Cabbage fields were visited at Racine, Wisc. during the week of Sept. 9 to 15. The tests of resistant cabbage are located here and do not show so well as in other years because of the complicating black leg and black rot, but so far as Fusarium disease (yellows) is

concerned, the tests are striking. Rows were seen with 90% marketable cabbage grown from resistant seed and contrasted with these were checked rows from commercial seed showing 90% yellows, 10% sound."

Black rot caused by Bacterium campestre.

Michigan: Disease found doing 25% damage in one small field at Manistique.

New Mexico: Quite a number of specimens of cabbage plants showing black rot have been received from Valencia County.

CORN

Smut caused by Ustilago zeae.

Connecticut: About the same amount as usual. First appeared early in July. Does not appear to be increasing.

North Dakota: Not so much as usual. Slow growth conditions of the crop in the spring and continued dry weather probably unfavorable. First noticed July 25 at Fargo. Disease is not increasing in corn region. It was always quite abundant even on new prairie land far distant from corn cultivation. There is a possibility of its being carried internally in seed. Has been observed on all kinds of land and at various elevations.

OATS

Smut caused by Ustilago avenae and U. levis.

Idaho: Less than usual as more seed is being treated. Appeared about July 25. Loss in untreated fields up to 25%. Treatment effective. About 95% of seed oats treated this spring. Counties not having county agents are in need of demonstration work.

PEACH

Leaf Curl caused by Exoascus deformans.

Leaf curl did more damage to peaches this past season than for a number of years. The cold, wet weather of spring delayed the opening of the buds and gave a comparatively long period during which infection could take place. It is probable that this, together with the abundance of moisture, was responsible for the unusually large amount of curl.

Alabama: Much more severe than last year, due to favorable weather conditions. Somewhat severe on seedling peaches.

Colorado: Disease not noted this season.

Connecticut: More prevalent this year than for a long time. First reported in June from all over the state. Prompt spraying kept almost all of the orchards fairly free but unsprayed ones had great amount of the disease. Elberta most affected.

Florida: Has not been observed in the past few years.

Louisiana: Disease does not occur.

Michigan: Not so much disease this year as last. First noticed about May 20. Defoliation occurred in many cases. Fall spraying is not advocated by the Entomology Department of the College. It was tried out to some extent as early as 1895 but never became popular.

(Berrien and Oceana Counties as reported by Mr. Leslie Pierce, Fruit Disease Investigations, Bureau of Plant Industry): About the same as last year. First reported June 1. On unsprayed trees 50% of the leaves affected. Fall spraying practiced in about 90% of the orchards.

Mississippi: Disease never common or important but occurred occasionally this year. First appeared April 1.

New Jersey: Severe in northern part of state. About half the orchards are sprayed in the fall.

New York: Leaf curl unusually severe this year. It has been estimated that 48% of the leaves on affected trees throughout the state were diseased. Results of fall spraying this season were superior to those secured from applications in the spring. A more detailed report has already been made and published in Plant Disease Bulletin No. 2, 1917.

North Carolina: More curl than last year. First appeared May 14. Most serious in western part of state. Fall spraying not generally practiced.

Ohio: About the same amount as in 1916. Conditions are favorable each season. First appeared about June 1. Elberta and Crawford most affected, Smock and Salway types least affected. Fall spraying quite largely practiced. Some complaint of lack of control this past year.

Virginia: More prevalent this year than last. Cool, damp spring affected development. First appearance about April 25. Very heavy infection on trees not receiving a dormant spray. Practically all commercial growers make this application.

Washington: Disease prevalent in about the same amount as last year. First reported May 15. Winter spraying is very generally practiced.

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Scab caused by *Cladosporium carpophilum*.

Alabama: Very little on leaves and fruit although plentiful on twigs. First reported in June. Not economically important.

Arkansas: Disease general, first occurring in July. No loss in well kept orchards but much damage in poorly kept ones. Spraying with lime-sulfur and Bordeaux is generally practiced with good results.

Connecticut: Scab generally appearing in August. Elberta most affected, Champion least affected. Spraying for scab is not generally practiced although it can be controlled by the proper applications.

Florida: More or less common each season. Very little spraying.

Georgia: (J. W. Roberts, Fruit Disease Investigations, Bureau of Plant Industry): Very slight amount. Spraying with self-boiled lime-sulfur generally practiced. Sulfur dust employed to some extent. Results of the spraying this year are good.

Louisiana: Rather common but not serious.

Michigan: Disease present. Peaches are so scarce this year that deterioration of this kind is not charged against stock.

(Berrien and Oseana Counties as reported by Mr. L. Pierce, Office of Fruit Disease Investigations, Bureau of Plant Industry). Scab has not been of any commercial importance for the past two seasons. About 40% of the orchards in these counties are sprayed with self-boiled lime-sulfur. Perfect control is secured.

Mississippi: Scab very common. First reported May 15. Loss slight because most peaches grown here are consumed at home. Lime-sulfur is used very little but effective where applied.

New Jersey: About the same amount as last year. Lime-sulfur is used on about half the orchards with excellent results.

New York: Slight amount all over the state. First reported July 16. Very little spraying for scab is carried on.

North Carolina: Scab very common. First reported July 3. Early varieties had only little scab but all late varieties badly affected.

Ohio: Scab prevalent in about the same amount as last year. Very little loss. Varieties most affected Salway, Lemon Free, Morris, White Smock, and late Heath. Varieties least affected Elberta and Crawfords. In the Peach Belt spraying with selfboiled lime-sulfur was practiced to a considerable extent.

Tennessee: Very slight this season.

Virginia: Prevalent in about the same amounts as usual. First reported July 1. Late varieties most affected. Practically all commercial growers spray with self-boiled lime sulfur 8-8-50. Three summer applications gave 95% control.

Brown Rot of Stone Fruits caused by Sclerotinia cinerea.

Brown rot occurred this season with varying intensities in different states and on various hosts depending on local weather conditions and stages of the host plants. Considerable blossom blight of all stone fruits is reported from the northern states and severe loss from the rotting of cherries has been experienced in Michigan, Ohio, New York and Connecticut. The dryer weather of middle and late summer did much to lessen the injury to the fruit of peaches, plums, etc. The greatest damage to peaches occurred in the South Atlantic states where the summer rainfall has been abundant.

Alabama: About the same this year as usual. Late infection on unsprayed peaches.

Arkansas: Slightly prevalent, beginning in August. Very little early infection of peaches but none of plums. There was considerable rotting of peaches this year which seems to be largely due to Rhizopus.

Colorado: Very little damage this season. Climatic conditions unfavorable.

Connecticut: A scant amount on peach and plum. Very bad on cherry, especially the sweet varieties. Wet weather at the ripening time was the most important factor. Early peach varieties, such as Champion, more affected than late varieties.

Florida: Prevalent as usual. Late infection severe on peaches. Most severe during June, July and August which is the rainy season.

Georgia: (Fort Valley Section as reported by J. W. Roberts, Fruit Disease Investigations, Bureau of Plant Industry) Slight amount of disease only on peaches this year.

Louisiana: No report. Disease usually present in small amounts.

Michigan: 50% of the unsprayed cherries were destroyed. Weather at harvest time extremely wet. There has been little or no loss to plums or peaches so that the injury to these fruits is much less than usual.

Minnesota: About the average amount or possibly less this year, occurring mostly on plums early and late. Cool, dry weather probably inhibited its development. Considerable blossom blight on plums.

Mississippi: Not so much as usual. Small amount of early and more late infection of peaches. Common but not severe on plums. Hairy or fuzzy varieties mostly affected but disease is found on all. The precipitation has been light this season and conditions have not been favorable for brown rot.

New Jersey: Common in unsprayed orchards. Severe after blossoming. Affected by wet weather. Triumph and Champion peaches most affected. Elberta and Belle varieties least affected.

New York: Serious this season on cherries, not so serious on peaches. The disease seems to be increasing on apples, at least there are more reports of it each year. On plums the disease is reported as being common in nine counties and on cherries abundant in twelve counties.

North Carolina: Very severe on peaches, occurring late in the season. Frequent showers favored the outbreak. All varieties except the early maturing ones were affected from 1-75%. Disease most common on peaches and yearly causes very serious losses.

North Dakota: "Practically none observed on cultivated or wild plums which are the only available stone fruits. The only opportunity this disease would have in North Dakota would be to affect native wild plums, pin cherries and choke cherries and the cultivated varieties known as Compass cherries. So called brown rots of these fruits have never been particularly noticeable." H.L.B.

Ohio: Less than usual. First reported July 2. Slight amount of late infection on peaches, moderate to bad amount of early infection on plums, and a quite severe early infection of cherries. Duke and sweet cherries most affected. Sour cherries least affected. Of the plums the European varieties suffered most. The crop of cherries is too light to furnish much data. Plum crop also short.

Tennessee: Less than last year. First reported July 1. Only a slight amount of disease on peaches and plums. Alexander most affected. Greensboro least affected. Very small peach crop in the state.

Vermont: About the same amount as usual, occurring late on plums.

Virginia: Not so severe or generally prevalent as last year. Severe on peaches, occasional on plums and rare on cherries. Hot, dry summer evidently checked the disease on peaches. Early Crawford, J. H. Hale, and Champion most affected. Belle, Carmen and Elberta least affected.

(McClintock): Serious this year in this region. Appeared early in July. Heavy rains favored development.

Washington: Less than usual, occurring on prune, peach and cherry. The dry summer has lessened the severity to a marked extent. Blossom blight of prune is very important in Clarke County. Does not occur in state east of the Cascades but present more or less throughout the coast counties.

Other Diseases.

Connecticut: Yellows more common this year than usual. Winter injury, collar girdle type, very bad last winter. As the result of this injury trouble similar to yellows is showing up on many trees.

Louisiana: "Bacteriosis is most serious disease of peaches in state, doing considerable damage to peach trees of all ages. A dying of the buds, probably winter injury, is of considerable importance. Peach leaf rust is also common during fall months and must weaken the vitality of the trees."- C. W. E.

Michigan: (Berrien and Oceana Counties, Mr. L. Pierce, Fruit Disease Investigations, Bureau of Plant Industry). Black spot caused by Bacterium pruni shows on possibly 10% of the fruit and 25% of the foliage in this region.

North Carolina: "Bacterium pruni was observed only in the orchard of Experiment Station grounds July 11. Variety Lady Ingold only one severely affected. These trees were practically defoliated by the middle of July and every fruit on the trees was fissured and checked. One report of this disease on plums came from Charlotte."- F. A. W.

Ohio: "Winter injury exhibited unusual forms, notably that of killing all buds within 4 to 10 inches of the ends of the shoots. These shoots remained green in most areas. Pronounced lateral branching has resulted. Heavy pulling of peach orchards reported from Lake area."- A. D. S.

PEAR

Fire Blight of Pear, Apple, Quince, etc., caused by Bacillus amylovorus.

This disease occurred in about the same quantities, or in less amounts, than usual. Blossom blight followed by infection of the twigs was the most common form of the disease. In Alabama, Mississippi and Louisiana Sand pears are about the only kind that can be grown on account of blight.

Alabama: Average amount of disease. All forms of blight were severe on pear, slight on quince and slight to moderate on apple. Practically the only variety of pear now grown in Alabama is the Sand pear which is almost resistant to blight. The disease is the limiting factor to the successful growing of pears in the state.

Arkansas: The same as last year. Very severe on pears, attacking both twig and blossom. Slight amount of blossom blight on apple. All varieties of pear blight severely. Yellow Transparent most susceptible of apple varieties.

Colorado: About an average amount. Most abundant in the smaller farm orchards. Blossom and twig blight severe on apples and pears with a moderate amount of body blight on these hosts. On the western slope the Bartlett, Flemish Beauty and Chairgeau are very susceptible. Among the most resistant varieties are the Anjou, Mt. Vernon, Suduth and Kieffer. The most susceptible apples are Jonathan, Red Mountain, Transcendent crab and Peewaukee.

Connecticut: No more than average, perhaps less than last year. Twig blight occurs in moderate amounts on pear, slight amounts on quince, and very slight amounts on apple.

Florida: About the same as usual. Blossom blight slight, twig blight severe on pears.

Louisiana: About the same as usual on pears. Blossom and twig blight severe, body blight slight. Sand pears showed resistance. Most other varieties badly affected.

Michigan: "Less blight this year than usual. In spite of extensive aphid attack and in spite of a great deal of blight last year our predictions of severe fire blight epidemics were not borne out. Can only guess that hot, dry weather of last season caused a lessening of hold-over cankers." - E. A. B.

(Berrien and Oceana Counties, reported by L. Pierce, Office of Fruit Disease Investigations, Bureau of Plant Industry.): About the same as last year. First reported June 10. Twig blight slight on pear, very slight on apple and quince, body blight very slight on pear. Yellow Transparent and Alexander are the most susceptible of apple varieties and Kieffer most resistant of pear varieties.

Minnesota: Less than usual, occurring on apples to slight extent. Virginia Crab, Wealthy, Duchess and Greening are most susceptible. Much black rot canker is following the injury of previous years.

Mississippi: About the same as last year, occurring in large amounts. Severe on pear and moderate on apple. All varieties of pears are more or less affected, usually severely.

New Jersey: Less than last year.

New Mexico: Increasing in northwestern part of state.

New York: Not as much fire blight this year as usual. According to plant disease reporters the varieties Bartlett, Clapp's Favorite, and Bosc, listed in order of importance, are the most susceptible to blight this year. Kieffer and Seckel are most resistant. Of the apples Rome Beauty, Wealthy, Twenty Ounce and Sutton are most susceptible and Baldwin most universally resistant.

North Carolina: Blossom and twig blight severe on apples in a few localities. The disease occurs in almost every orchard.

North Dakota: "Not as serious as usual, probably due to slow spring growth conditions and following dry weather. Twig blight a common form on apples. Mountain ash was badly affected. A great many trees were dying when dry weather came. Hybernal and Patton's Greening most resistant in this region. Siberian Crabs and Mountain Ash non-resistant. In seasons of rapid growth none of the apples are thoroughly resistant. Disease is very destructive after winter freezing and sun scalding on the body of the tree." - H. L. B.

Ohio: Much less than usual. Severe to moderate on pears, moderate to very slight on apples. Jonathan, Yellow Transparent, Grimes and others have proven very susceptible. Winesap, Rome Beauty, Newtown Pippin, Late Strawberry, Ben Davis, Baldwin and Baltimore mostly resistant.

South Dakota: Very prevalent the last three years.

Tennessee: Less than last year. Severe on pear and quince, moderate on apple. Late blossoming varieties most severely attacked.

Vermont: Not observed this year but common last year.

Virginia: About the same. Twig blight and body blight of apples severe. Disease was severe in some localities this year where there was practically none last year and places with heavy infection in 1916 had little in 1917.

Washington: Much less than usual with a moderate amount of twig blight on all hosts.

Scab caused by *Venturia pyrina*.

New York: Prevalent in about the same or slightly larger amount than usual. Records of occurrence have been received from twenty-one plant disease reporters in fourteen counties of the state. First report came from Yates County June 2. In some regions nearly all leaves on susceptible varieties are affected and in Orleans County nearly 90% of the fruit of Bartlett and Clapp's Favorite are said to be seriously diseased.

Table 4.- Resistance and susceptibility of pears to scab in 1917 as shown by New York plant disease reporters September 22.

	Number of reporters listing variety as:			Number of reporters listing variety as:	
Variety	Most affected	Least affected	Variety	Most affected	Least affected
Flemish Beauty	5	0	Seckel	2	2
Duchess	4	0	Kieffer	0	4
White Doyenne	2	0	Anjou	0	1
Bartlett	3	3	Sheldon	0	1
Clapp's Favorite	1	0	Vicar	0	1

PEPPER

Pod Canker and Mosaic.

Mr. G. H. Godfrey, Office Cotton, Truck and Forage Disease Investigations, B. P. I., who spent Sept. 27, 28, and 29 in Pennsylvania and New Jersey trucking sections, reports in a letter dated Sept. 28: "I spent yesterday and today in

Pennsylvania and New Jersey looking into the potato and rhubarb troubles. I find peppers badly injured (10% or more) with pod canker, also more than 50% of a large field with mosaic."

Fusarium wilt of Chile Pepper (Capsicum sp.).

New Mexico: Sept. 1, 1917. "Wilt of the Chile pepper is worse this year than ever before. It first appeared in 1908, has increased from year to year, until now we have from 25-100% of the crop affected, in some cases causing total loss of the crop. This disease is most common in Dona Ana, Lincoln, Valencia, Bernalillo and Sandoval Counties. In Valencia and also in Bernalillo Counties I have seen fields two weeks ago in which about 95% of the crop was wilted. Dona Ana and Valencia Counties are the center of raising the Mexican Chile on a commercial basis. This year's loss caused great discouragement among the growers. I have isolated a Fusarium from many diseased Chile plants and inoculation experiments have proven its pathogenicity."- F. C. W.

WHEAT

Black Chaff Disease.

North Dakota: "As so far located, the disease does not show symptoms of being particularly destructive. It may be that this bacterial disease may have more importance than we have heretofore associated with bacteria in the matter of injury to germination. This is a point worth considerable study, particularly in the Durum wheats. Heretofore it has been usually assumed that the scab organism and other Fusarial types were the chief causes of failure to germinate when seed is not otherwise injured by climatic conditions."- H. L. B.

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